1   **METHOD AND PLATFORM FOR**

2   **USING WIRELESS MULTIMEDIA FILES**

3   <u>BACKGROUND OF THE INVENTION</u>

4   1. Field of the Invention

5   The present invention relates to a method for using wireless multimedia files and

6   more particularly to a method that is adapted to allow a multimedia file including digital

7   compressed video and voice components to be played on a hand-held device with low

8   frequency bandwidth.

9   2. Description of Related Art

10   As electronic commerce has developed on the web, each of the web sites are

11   designed in ASP (active service page) format to attract more customers. The ASP includes

12   considerable images, video, and voice etc. files designed as a multimedia page.

13   Transmitting the web page, such as the multimedia pages, to the client needs enough

14   bandwidth. But it is difficult to transmit the multimedia pages to the client via the wireless

15   web.

16   Lastly, a SMIL (synchronized multimedia integration language) is developed to

17   design the multimedia pages easily. Therefore, there are many media computers, as

18   RealNetworks ™ and QuickTime ™, trying to develop multimedia browsers to support the

19   SMIL format. The multimedia browsers, such as Fluition ™ by Confluent Technologies™,

20   Grins ™ by Oratrix ™, MAGpie ™, captioning tool by WGBH ™, Real Slideshow 2.0™

21   by RealNetworks ™ and SMIL Composer SuperToolz ™ by HotSausage ™ are provided

22   for user downloading. With reference to Fig. 7, a program file of the SWIL is shown,

23   wherein the program includes two video files (003.mpeg and 001.mpeg) and one picture

24   (002.jpg). Referring to Fig. 8, a browser (50) executes the SMIL program, and shows two

1   video (60)(61) corresponded to the two video files of the program and one picture (62)

2   corresponded to the one picture of the program at the same time. Therefore, the web sites

3   are designed toward multimedia files to demonstrate products and services on the web.

4   Recently, the mobile hand-held device is popular and not only enables transmitting

5   voice information, but also provides data information to each other. The WAP (wireless

6   active page) is developed to transfer the HTML page to XML (eXtensible Markup

7   Language) page, that is, the HTML (Hypertext Markup Language) page is able to be shown

8   on a monitor of the mobile hand-held device via WAP. The HTML pages involve fewer data

9   bits than the multimedia page, but WAP does not have enough transmitting bandwidth to

10   transmit the multimedia format. That is, the monitor of the mobile hand-held device does

11   not browse the multimedia pages from the web, or even connect to the Internet via wireless

12   net.

13   The present invention provides a transferring method and platform to make the

14   wireless hand-held device be able to browse the multimedia on the web.

15   SUMMARY OF THE INVENTION

16   The objective of the present invention is to provide a transferring method wherein

17   the multimedia page of web is able to transmit a multimedia format adapted for a hand –held

18   device.

19   Other objects, advantages, and novel features of the invention will become more

20   apparent from the following detailed description when taken in conjunction with the

21   accompanying drawings.

22   BRIEF DESCRIPTION OF THE DRAWINGS

23   Fig. 1 is a structure of the WSMIL (wireless synchronized multimedia integration

24   language) in accordance with the present invention;

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1   Figs. 2A~2G are program examples according to the WSMIL of the Fig.1;

2   Fig. 3 is a block diagram of a transmitting platform in accordance with the present

3   invention;

4   Fig. 4 is an active flow of the transmitting platform and the hand-held device in

5   accordance with the present invention;

6   Fig. 5 is a program example of an embodiment of the WSMIL file in accordance

7   with the present invention;

8   Fig. 6 is a frame of the Fig. 5 shown on a browser of a hand-held device;

9   Fig. 7 is a program of a SMIL multimedia file; and

10   Fig. 8 is a frame of the Fig. 7 shown on a browser of a common electronic device

11   such as PC browser.

12   DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

13   A WSMIL (wireless synchronized multimedia integration language) develops to

14   base on an XML (eXtensible Markup Language), especially using the WSMIL to design

15   multimedia files is able to be adapted for a hand-held device browsing a multimedia file

16   from the World Wide Web. A standard of the WSMIL allows playing of one multimedia file

17   with a compressed video and a compressed voice components when the hand-held device

18   send a browsing request to web site of the World Wide Web .Wherein the WSMIL

19   multimedia file uses card elements to separate multimedia files to one multimedia file, and

20   then uses class elements to classify related multimedia files. Therefore, the WSMIL is able

21   to show one multimedia file on a browser of the hand-held device send a browsing request

22   to the web site designed by WSMIL.

23   With reference to Fig. 1, a structure of the WSMIL is shown. Components of the

24   WSMIL multimedia file are at least one head element and at least one card element. An

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1 attribute of each card element defined by an id (identifying number). The head element

2 includes multimedia information, such as the author and production date of the WSMIL

3 multimedia file, and the class element is used for classifying the card elements related each

4 other. Besides, the card element includes information with a timing order and linking space

5 of the multimedia file for deciding the play multimedia sequence on the browser.

6 With reference to Figs. 2A and 2B, hyper linking examples of the WSMIL file are

7 shown. A URL (Uniform Resource Locator) address, www.host2.com/anther.wsmil, is

8 combined on a D image for providing a user to click, and then connects to the URL address.

9 A size of an A image with the URL address is able to adjust by using an anchor element and

10 a cord element, as shown in Fig. 2B. Besides, a linking time from the A image clicked is

11 able to be preset by using a begin element and an end element. As shown in Fig. 2B, when

12 the A image is clicked, the hyper linking is begun to execute after two minutes.

13 Referencing to the Fig. 2C, the WSMIL multimedia file further comprises

14 substituting elements to replace some of the multimedia pages with video and voice files to

15 show on the browser of the hand-held device by the image or test format. The substituting

16 elements are an alt element and an altsrc element. An example is shown in Fig. 2C, when a

17 digital video file, A..mpg, does not show on the browser, and then a B.txt replaces the

18 A.mpg to show on the browser. If the voice file, C.mp3, does not show, a text "The Audio

19 Can Not Be Shown" replaces the voice file to show.

20 With reference to Fig. 2D, an example of the WSMIL file with system parameters is

21 shown. The system parameters are designed for detecting a connecting rate of a client

22 device. Therefore, the multimedia file is designed for a different showing frame, as shown

23 Fig. 2D, when the connecting rate between a Web site with a URL address and the client

24 device is over 56000 bits/sec, and then A.mpg is shown on the browser of the client device.

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1   If the connecting rate is less than 56000 bits/sec, a frame of a B.jpg is shown on the browser.

2   Using the system parameter elements provides a content adaptation service according to

3   different client devices.

4   With reference to Figs. 2E and 2F, examples of multimedia files using layout

5   elements to design position of multimedia components are shown on the browser. The

6   layout elements are region element, % parameter, pixel etc. parameters.

7   With reference to Fig. 2G, an example of the WSMIL multimedia files is playing

8   order. Because WSMIL is able to allow one multimedia file to show each required send, a

9   video A / an audio A and a video B / an audio B are shown at different times.

10   As per the above description, a WSMIL multimedia file is able to detect the client

11   device and decides how much load of the related information is downloaded to the browser.

12   Especially, the WSMIL multimedia file always allows one video file and one voice file to

13   show, thus the multimedia file is able to be easily demonstrated on the browser of a

14   hand-held device.

15   Referencing to Fig. 3, a structure of a transferring platform for transmitting an

16   SMIL multimedia file to a WSMIL multimedia file applied on the mobile client. A WEB

17   structure comprises a client device (10), a WAP gateway (20) offering the hand-held device

18   a way to connect to the Web, and a Web server (30) connected to the WAP gateway (20).

19   The platform (40) connects a web server (30) with the client device (10), wherein SMIL

20   Documents and multimedia resources according to the SMIL files are connected to the

21   platform (40). The client device (10), i.e. the hand-held device, uses a PCMCIA to connect

22   an IEEE802.11 wireless web card that is able to have dual connection with the WAP

23   gateway (20).

24   The platform (40) comprises a detector (401), a filter (402), a captor (403), a

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1 converter (404), and an extractor (405). The detector (401) detects the states of the client

2 device (10) and then decides if the SMIL file should be transmitted. The filter (402)

3 connected the SMIL documents with the detector (401) transfers the SMIL files to WSMIL

4 file. Because the WSMIL bases on the XML, the filter is an XML parser. The captor (403)

5 connected to the multimedia resource with a plurality of multimedia components catches

6 multimedia elements that the WSMIL needs, and stores them. The converter (404) catches

7 the multimedia elements from the captor (403) and converts the multimedia elements to low

8 data bits format, that is, a video file converts to a digital compressed file and a voice file

9 converts to a digital compressed file. The extractor (405) connected to the filter (402) and

10 the converter (404) transmits the WSMIL file and the low data bits of the digital compressed

11 multimedia elements to the client device send browsing require to the web site offering

12 SMIL multimedia files.

13 Referencing to Figs.3 and 4, an operating flow of the platform is shown when the

14 client device (10) sends a browsing request to the platform (40). Firstly, the detector (401)

15 detects states of the client device (10) such as the transmitting rate in the connection with

16 the platform (40). If the transmitting rate is able to allow to download big data bits of the

17 SWIL multimedia files, the platform (40) does not convert the SWIL files to the WSMIL

18 file, and directly sends the SWIL files to the client device (10). But if the transmitting rate is

19 not able tobrowse the SMIL multimedia files then the detector (401) catches the SMIL files

20 and sends them to the filter (402), such as an XML PARSER. The filter (402) extracts an

21 SMIL DOM tree from the SMIL file and then transfers the SMIL DOM tree to a WSMIL

22 DOM tree. Secondly, the captor (403) catches the multimedia components according to

23 URL addresses from the multimedia resource. Then the converter (404) converts the

24 multimedia components to a digital compressed format such as mepg and mp3 formats for

1   sending the multimedia components through the extractor (405) to the client device (10),

2   especially, the hand-held device. Therefore, the platform is able to transfer the SMIL file to

3   the WSMIL file browsed on the hand-held device.

4   With reference to Fig. 5, a program of the WSMIL file corresponds to the frame

5   shown in Figs. 6A and 6B. Firstly, the WSMIL file includes a first video file (003.mpeg) and

6   a second file (001.mpeg), and one picture file (002.jpg), wherein a first card element

7   describes the first video file, and a second card element describes the second video file and

8   the picture file. When the client downloads this WSMIL file and the multimedia

9   components to a browser (11) of the hand-held device (not shown), the browser (11)

10   executes the program and then show one video (111), as shown in Fig.6A. When the first

11   video (111) has finished playing, the browser (11) follows the card element order, that is the

12   second card element, to show the second video (112) and the picture (113), as shown in Fig.

13   6B. The one video file has fewer data bits than at lest two video files, so as to allow the

14   WSMIL multimedia file to be downloaded quickly.

15   Although the present invention has been explained in relation to its preferred

16   embodiment, it is to be understood that many other possible modifications and variations

17   can be made without departing from the spirit and scope of the invention as hereinafter

18   claimed.